

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Silver et al.	
Serial No.: to be determined	
Filed: 11/7/2003	Group Art Unit: 2621
Title: Fast High-Accuracy Multi-Dimensional Pattern Inspection	Examiner: Mariam, Daniel G.
Attorney Docket No.: C97-050_CON3	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Dear Sir:

This Information Disclosure Statement is submitted:

- ☒ under 37 CFR 1.97(b), or
(Within three months of filing national application; or date of entry of international application; or before mailing date of first office action on the merits; whichever occurs last)
- ☐ under 37 CFR 1.97(c) together with either a:
- ☐ Statement under 37 CFR 1.97(e), or
 - ☐ a \$180.00 fee under 37 CFR 1.17(p), or
(After the CFR 1.97(b) time period, but before final action or notice of allowance, whichever occurs first)
- ☐ under 37 CFR 1.97(d) together with a:
- ☐ Statement under 37 CFR 1.97(e), and
 - ☐ a \$180.00 fee set forth in 37 CFR 1.17(p).
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☒ Applicant(s) submit herewith Form PTO 1449-Information Disclosure Citation together with copies, of patents, publications or other information of which applicant(s) are aware, which applicant(s) believe(s) may be material to the examination of this application and for which there may be a duty to disclose in accordance with 37 CFR 1.56.

The relevance of the attached references is that this is the closest art, of which Applicant is aware.

Applicant submits that the above references taken alone or in combination neither anticipate nor render obvious the present invention. Consideration of the foregoing in relation to this application is respectfully requested.

It is requested that the information disclosed herein be made of record in this application.

Respectfully submitted,

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, or the correspondence is being facsimile transmitted to the USPTO, on the date indicated below.

Date of Deposit: 11/10/03

Typed Name: Cheryl Sloane

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Cheryl Sloane

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Date: November ⁷/₁₀, 2003

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			Application Number	Not Known	
			Filing Date	11/10/2003	
			First Named Inventor	Silver, et al.	
			Group Art Unit	2621	
Examiner Name	D. Mariam				
Attorney Docket Number	C97-050 CON3				
Sheet	2	of	3		

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		COGNEX CORPORATION, "Description Sobel Search," Natick, MA USA, 1998 but public before the above-referenced filing date.	
		COGNEX CORPORATION, "Chapter 7 CONLPAS," Cognex 3000/4000/5000 Programmable Vision Engines, Vision Tools, 1996, pp. 307-340, Revision 7.4 590-0136, Natick, MA USA	
		HU, YU HEN, "CORDIC-Based VLSI Architectures for Digital Signal Processing," IEE Signal Processing Magazine, July 1992, pp. 16-35, 1053-5888/92, USA	
		HU, et al, "Expanding the Range of Convergence of the CORDIC Algorithm," IEEE Transactions on computers, January 1991, pp. 13-21, Vol. 40, No. 1, USA	
		Ballard, D.H., "Generalizing the Hough Transform to Detect Arbitrary Shapes," Pattern Recognition, 1981, pp. 111-122, Vol. 13, No. 2, Pergaman Press Ltd., UK	
		LIN, et al., "On-Line CORDIC Algorithms," IEEE Transactions on Computers, pp. 1038-1052, Vol. 39, No. 8, USA	
		WALLACK, AARON SAMUEL, "Chapter 4 Robust Algorithms for Object Localization," Algorithms and Techniques for Manufacturing, 1995, pp. 97-148 (and Bibliography pp. 324-335) PhD thesis, University of California at Berkeley, USA	
		JAMES D. FOLEY, ANDRIES VAN DAM, STEVEN K. FEINER, JOHN F. HUGHES, Second Edition in C, Introduction to Computer Graphics, pp. 36-49, Addison-Wesley Publishing Company, 1994, USA	
		LISA GOTTESFELD BROWN, <u>A Survey of Image Registration Techniques</u> , Department of Computer Science, Columbia University, New York, NY 10027, ACM Computing Surveys, Vol. 24, No. 4, December 1992	
		GUNILLA BORGEFORS, <u>Hierarchical Chamfer Matching: A Parametric Edge Matching Algorithm</u> , IEEE Transactions on Pattern Analysis and Machine Intelligence, Vol. 10, No. 6, November 1988	

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OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
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		DANIEL P. HUTTENLOCHER AND WILLIAM J. RUCKLIDGE, <u>A Multi-Resolution Technique for Comparing Images Using the Hausdorff Distance</u> , Department of Computer Science, Cornell University, Ithaca, NY 14853,	
		I.J. COX AND J.B. KRUSKAL (AT&T Bell Laboratories, Murray Hill, NJ), <u>On the Congruence of Noisy Images to Line Segment Models</u> , IEEE, 1988	
		DANIEL P. HUTTENLOCHER, GREGORY A. KLANDERMAN AND WILLIAM J. RUCKLIDGE, <u>Comparing Images Using the Hausdorff Distance</u> , IEEE Transaction on Pattern Analysis and Machine Intelligence, Vo. 15, No. 9, September 1993	
		AKINORI KAWAMURA, KOJI YURA, TATSUYA HAYAMA, YUTAKA HIDAI, TADATASHI MINAMIKAWA, AKIO TANAKA AND SHOICHI MASUDA, <u>On-line Recognition of Freely Handwritten Japanese Characters Using Directional Features Densities</u> , IEEE 1992	

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